

STATEMENT OF BASIS

Tuscaloosa, Alabama
Elk Corporation of Alabama
(413-0018)

This proposed renewal of the Title V Major Source Permit is issued under the provisions of ADEM Admin. Code R. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Elk's current Title V Major Source Permit will expire on October 12, 2011. Under the provisions of ADEM Admin Code R. 335-3-16-.12 major sources are required to submit applications for permit renewal at least six months but not more than 18 months, before the date of expiration. Elk's renewal application was due on April 12, 2011. The Department received Elk's renewal application on April 14, 2011.

Elk Corporation operates an asphalt roofing manufacturing facility in the city of Tuscaloosa, Alabama. The facility is allowed to operate 8760 hours per year. Based on the Title V renewal application, this facility is a potential major source for Particulate Matter (PM) and Volatile Organic Compounds (VOCs).

The significant sources of air pollutants at this facility are the following:

- Shingle Manufacturing Line 1
- Filler Production
- Line 1 Filler Handling System
- Line 1 Granule Handling and Storage
- Shingle Manufacturing Line 2
- Granule Application Line 2
- Line 2 Filler Handling System
- Line 2 Granule Handling and Storage
- Heat Transfer System
- Storage Tanks

40 CFR Part 63 Subpart LLLLL – National Emission Standards for Hazardous Air Pollutants for Asphalt Processing and Asphalt Roofing Manufacturing applies to asphalt processing and roofing facilities that are considered major sources of HAPs. A major source of HAPs is defined as one that has the potential to emit 10 TPY of any one HAP, or 25 TPY of any combination of HAPs. Elk Corporation is not considered a major source of HAPs so it is not subject to NESHAP Subpart LLLLL regulations.

40 CFR Part 63 Subpart AAAAAAA – National Emissions Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Manufacturing applies to area sources of asphalt processing and asphalt roofing manufacturing facilities. Elk Corporation would be subject to the applicable standards of NESHAP Subpart AAAAAAA.

Shingle Manufacturing Line 1

A coater applies asphalt that has been mixed with filler to fiberglass mat. Application of granules is followed by application of sealant then pattern-cutting and the application of adhesive (laminator). The emissions from Line 1 are not controlled by a control device.

The roofing line was constructed before 1976; therefore, Line 1 is not subject to 40 CFR 60 Subpart UU, “*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*”.

The following units are part of Shingle Manufacturing Line 1:

- Horizontal Coating Mixer (Fugitive Emissions)
- Coater (EP 5-1)
- Sealant Applicator (Fugitive Emissions)
- Adhesive Applicator (Fugitive Emissions)

Emission Standards:

- **Particulate Matter:**

The particulate emission rate from the coater (EP 5-1) shall not exceed the allowable set by rule 335-3-4-.04.

ADEM Admin. Code R. 335-3-4-.04(1):

$$E=3.59(P)^{0.62} \quad (P < 30 \text{ tons/hr})$$

$$E=17.31(P)^{0.16} \quad (P \geq 30 \text{ tons/hr})$$

Where E=Emissions in lb/hr, P=Process weight in tons/hour

Emission Point	P	E
	Tons/hr	lb/hr
Coater (EP 5-1)	8.5	13.53

- **Polycyclic Aromatic Hydrocarbon (PAH)**

The PAH emission rate from the coater shall not exceed 0.0002 lb/ton of asphalt roofing product manufactured.

40 CFR Part 63 Subpart AAAAAAA

- **Opacity:**

This source shall not emit particulate matter of an opacity of more than one 6-minute average greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate matter emissions greater than 40%.

ADEM. Admin. Code R. 335-3-4-.01(1)

Expected Emissions:

Emission Point	Pollutant	Expected Emissions (lb/hr)
Coater (EP 5-1)	PM ¹	5.02
Coater (EP 5-1)	VOC ¹	2.54
Coater (EP 5-1)	Formaldehyde ¹	0.013
Coater (EP 5-1)	PAH ²	0.00015 lb/ton
Coater (EP 5-1)	HAPs ¹	0.23
Coating Mixer (FE)	VOC ¹	4.55
Coating Mixer (FE)	Formaldehyde ¹	0.025
Coating Mixer (FE)	HAPs ¹	0.27
Sealant Applicator (FE)	VOC ¹	0.0005
Adhesive Applicator (FE)	VOC ¹	0.0064

¹ Emissions are based on ARMA emissions factors.

² Based on 2/15/11 Stack Test Results

Periodic Monitoring:

- **Opacity and Particulate Matter:**

The facility shall perform a visual check, once per week, of the stacks associated with these units.

If instantaneous visible emissions in excess of 15% opacity are noted from the Coater (EP 5-1), maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Stack observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The Permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Filler Production

Washed limestone rock is unloaded from trucks into a hopper and transferred via two belt conveyors to a rock storage tank. From the storage tank, a sealed, vibratory-feed line transfers rock to two 10 TPH roller mills where it is ground to produce filler for roofing asphalt. Each mill has a heated air blower, a collection cyclone, and a baghouse. Filler is transferred pneumatically into three limestone storage silos, vented to a common baghouse. From the storage silos, filler is transferred pneumatically to production areas. There is no truck loading from the storage silos.

The roller mills are not subject to 40 CFR 60 Subpart OOO, “*Standards of Performance for Nonmetallic Mineral Processing Plants*”, because their capacity is less than 25 tons per hour. However, the emission limitations were based on Subpart OOO.

The Filler Production System is subject to 40 CFR 60 Subpart UU, “*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*”.

The following units are part of the Line 2 Filler Handling System:

- Roller Mill 1 with Baghouse (EP 6-1)
- Roller Mill 2 with Baghouse (EP 6-2)
- (3) Limestone storage silos with Baghouse (EP 6-3)
- Truck Unloading (Fug-1)
- Belt Conveyor 1 (Fug-2)
- Belt Conveyor 2 (Fug-3)
- Rock Storage Tank (Fug-4)

• Opacity Standards:

The Roller Mill 1 with Baghouse (EP 6-1) and the Roller Mill 2 with Baghouse (EP 6-2) shall not emit particulate matter of an opacity of more than one 6-minute average greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate matter emissions greater than 40%.

ADEM. Admin. Code R. 335-3-4-.01(1)

The emissions from the (3) Limestone storage silos with Baghouse (EP 6-3), Truck Unloading (Fug-1), Belt Conveyor 1 transfer point (Fug-2), Belt Conveyor 2 transfer point (Fug-3), and Rock Storage Tank (Fug-4) shall not exceed an opacity greater than 1%.

40 CFR 60 Subpart UU

- **Particulate Standards:**

Particulate matter emissions from the Roller Mill 1 with Baghouse (EP 6-1) shall not exceed the allowable set by rule 335-3-4-.04.

Particulate matter emissions from the Roller Mill 2 with Baghouse (EP 6-2) shall not exceed the allowable set by rule 335-3-4-.04.

Previously requested 40 CFR Part 60 Subpart OOO limits have been removed because the roller mills would not subject to this subpart.

ADEM. Admin. Code R. 335-3-4-.04(1)

Particulate matter emissions from the (3) Limestone storage silos with Baghouse (EP 6-3) shall not exceed 0.22 lb/hr.

ADEM Admin. Code R. 335-3-14-.04 (Anti-PSD)

Expected Emissions:

Emission Point	Pollutant	Expected Emissions (lb/hr)
Roller Mill 1 with Baghouse (EP 6-1)	PM	0.25
Roller Mill 2 with Baghouse (EP 6-2)	PM	0.25
(3) Storage Silos with Baghouse (EP 6-3)	PM	0.019

Based on baghouse 99.6% removal efficiency

Periodic Monitoring:

The following monitoring is utilized to provide reasonable assurance of compliance with the opacity and particulate matter standards. Since the expected actual emissions are approaching the Anti-PSD limit, this monitoring should be sufficient for indicating compliance with the particulate matter limit.

- **Opacity and Particulate Matter:**

The facility shall perform a visual check, once per week, of the stacks associated with these units.

If instantaneous visible emissions in excess of 10% opacity are noted from the Roller Mills (EP 6-1 & 6-2), maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

If any visible emissions are noted from the (3) Limestone storage silos with Baghouse (EP 6-3), Truck Unloading Area, Belt Conveyor Transfer Points, and Rock Storage Tank, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Stack observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The Permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust of each baghouse to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever a pressure differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Line 1 Filler Handling System

Limestone filler is transferred pneumatically from the silos to the filler processing unit or from trucks to the main Filler Silo with Baghouse (EP 7-1) from which it is transferred pneumatically to a Daybin with Baghouse (EP 7-2). Prior to being mixed with coating asphalt, the filler is heated in a gas-fired Rotary Kiln with Baghouse (EP 7-3). The kiln is heated with a 4.7 MMBtu/hr natural gas fired burner.

The Filler Silo and Daybin are subject to 40 CFR 60 Subpart OOO, "*Standards of Performance for Nonmetallic Mineral Processing Plants*".

The Line 1 Filler Handling System was constructed prior to 1980; therefore, the line 1 Filler Handling System is not subject to 40 CFR 60 Subpart UU, "*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*".

The following units are part of the Line 1 Filler Handling System:

- Filler Silo with Baghouse (EP 7-1)
- Daybin with Baghouse (EP 7-2)
- Rotary Kiln with Baghouse (EP 7-3)

Emission Standards:

- **Particulate Standards:**

Particulate matter emissions from the Filler Silo with Baghouse (EP 7-1) shall not exceed the lesser of 0.36 lb/hr or the allowable set by rule 335-3-4-.04.

Particulate matter emissions from the Daybin with Baghouse (EP 7-2) shall not exceed the lesser of 0.36 lb/hr or the allowable set by rule 335-3-4-.04.

40 CFR Part 60 Subpart OOO

Particulate matter emissions from the Rotary Kiln with Baghouse (EP 7-3) shall not exceed the lesser of 0.42 lb/hr or the allowable set by rule 335-3-4-.04.

ADEM Admin. Code R. 335-3-14-.04 (Anti-PSD)

- **Sulfur Dioxide:**

Sulfur Dioxide emissions from the burner shall not exceed the allowable set by Rule 335-3-5-.01

This section limits sulfur dioxide emissions from fuel burning equipment to 4.0 pounds per million BTU of heat input, for Category II counties. Tuscaloosa County is a category II county.

The sulfur dioxide emissions from the combustion of natural gas in the 4.7 MMBtu/hr burners are minimal.

- **Opacity Standards:**

These sources shall not emit particulate matter of an opacity of more than one 6-minute average greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate matter emissions greater than 40%.

ADEM. Admin. Code R. 335-3-4-.01(1)

Expected Emissions:

EP	Pollutant	Expected Emissions (lb/hr)
7-1	PM	0.25 ¹
7-2	PM	0.25 ¹
7-3	PM	0.26 ¹
7-3	SO ₂	0.003 ²
7-3	NO _x	0.46 ²
7-3	CO	0.38 ²
7-3	VOC	0.025 ²

¹ Emissions based on baghouse 99.9% removal efficiency

² Emissions based on AP-42 emissions factors

Periodic Monitoring:

- **Particulate Matter and Opacity:**

The facility shall perform a visual check, once per week, of the stacks associated with these units. If instantaneous visible emissions in excess of 10% opacity are noted, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Stack observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust each baghouse to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever a pressure differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Line 1 Granule Handling and Storage

Granules are delivered to the site by truck and railcar. Railcars are unloaded into an underground hopper, from which the granular materials are transferred via belt conveyor to a bucket elevator, which in turn drops the material onto the tripper conveyor located above the granule caves and silos. This tripper conveyor transports the various materials to the correct storage location. The railcar, conveyor, and bucket elevator drop points are all vented to a baghouse. Trucks are unloaded at a separate underground hopper, from which the granular materials are transferred via screw conveyor to a second bucket elevator then via a belt conveyor to the same tripper conveyor described above. The tripper conveyor drops butt granules directly into the caves below the tripper; it drops headlap material directly into the headlap silo at the end of the tripper; and it transfers backsurfacing material to a screw conveyor, which transfers this material to the backsurfacing silo. Materials from the headlap silo are transferred via screw conveyor to a bucket elevator to another screw conveyor to use bin. Materials from the back surfacing silo are transferred pneumatically to a receiving bin, and then via screw conveyor to a use bin. Butt granule is transferred from the storage caves via payloader to a run bin; these materials are then transferred via belt conveyor to a use bin.

The Line 1 Granule Handling and Storage system is subject to 40 CFR 60 Subpart UU, “*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*”.

The following units are part of the Line 2 Filler Handling System:

- Truck Unloading with Baghouse (EP 8-1)
- Bucket Elevator to Conveyor with Baghouse (EP 8-2)
- Conveyor and Bucket Elevator to Tripper with Baghouse (EP 8-3)
- Headlap Silo with Bin Vent (EP 8-4)
- Backsurfacing Silo with Bin Vent (EP 8-5)
- Backsurfacing Receiving Silo with Bin Vent (EP 8-6)

- **Particulate Matter:**

The particulate emission rate from the Line 2 Filler Handling System shall not exceed the allowable set by rule 335-3-4-.04.

ADEM Admin. Code R. 335-3-4-.04(1):

$$E=3.59(P)^{0.62} \text{ (P < 30 tons/hr)}$$

$$E=17.31(P)^{0.16} \text{ (P} \geq \text{30 tons/hr)}$$

Where E=Emissions in lb/hr, P=Process weight in tons/hour

Emission Point	P	E
	Tons/hr	lb/hr
8-1	40	31.2
8-2	40	31.2
8-3	40	31.2
8-4	50	32.4
8-5	47	32.1
8-6	47	32.1

- **Opacity Standards:**

The emissions from the Line 1 Granule Handling and Storage system shall not exceed an opacity greater than 1%.

40 CFR Part 60 Subpart UU

Expected Emissions:

EP	Pollutant	Expected Emissions (lb/hr)
8-1	PM	0.114
8-2	PM	0.065
8-3	PM	0.05
8-4	PM	0.047
8-5	PM	0.0094
8-6	PM	0.0094

Based on baghouse 99% removal efficiency

Periodic Monitoring:

- **Opacity:**

The facility shall perform a visual check, once per week, of the stacks associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to eliminate the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been eliminated.

Stack observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The permittee shall submit a written report of exceedance of the stack opacity to the Department semi-annually.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust each baghouse to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever a pressure differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Shingle Manufacturing Line 2

A coater applies asphalt that has been mixed with filler to fiberglass mat. Application of granules is followed by application of sealant and adhesive (laminator). The emissions from the coater, mixer, sealant and adhesive applicators, and the asphalt storage tanks are controlled by a single high velocity air filter (HVAF), emission point 2-1. The emissions from granule application system are controlled by a baghouse common to the Filler Heater, emission point 2-2.

The following units are part of Shingle Manufacturing Line 2:

- Asphalt Coater (EP 2-1)
- Horizontal Mixer (EP 2-1)
- Surge Tank (EP 2-1)
- Sealant Applicator (EP 2-1)
- Sealant Use Tank (EP 2-1)
- Adhesive Applicator (EP 2-1)
- Adhesive Mixture Tank (EP 2-1)
- (2) 100,000 Gallon Asphalt Storage Tanks (EP 2-1)
- (2) 15,000 Gallon Sealant and Adhesive Storage Tanks (EP 2-1)
- Granule Application System (EP 2-2)

The roofing line was constructed in 2004, and is subject to 40 CFR 60 Subpart UU, "*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*". The storage tanks, granule application system, and coater are affected units under this subpart.

Emission Standards:

- **Particulate Matter:**

Particulate matter emissions from the coater shall not exceed the lesser of 0.06 lb/ton of asphalt shingles produced or the allowable set by rule 335-3-4-.04.

ADEM Admin. Code r. 335-3-4-.04(1)

40 CFR Part 63 Subpart AAAAAAA

Particulate matter emissions from the Granule Application System (EP 2-2) shall not exceed 9.24 lb/hr.

ADEM Admin. Code R. 335-3-14-.04 (Anti-PSD)

- **Opacity:**

The exhaust gases from the saturator/coater shall not exceed an opacity greater than 20%.

40 CFR Part 60 Subpart UU

The saturator/coater capture system shall not discharge any visible emissions for more than 20% of any period of consecutive valid observations totaling 60 minutes.

40 CFR Part 60 Subpart UU

The exhaust gases from any asphalt storage tank shall not exceed an opacity greater than 0%, except for one consecutive 15-minute period in any 24-hour period when the transfer lines are being blown for clearing. The control device shall not be bypassed during this 15-minute period. If, however, the emissions from any asphalt storage tank are ducted to a control device for a saturator, the combined emissions shall meet the emission limit contained in 40 CFR 60 Subpart UU, §60.472(a) during the time the saturator control device is operating. At any other time the asphalt storage tanks must meet the opacity limit specified above for storage tanks.

40 CFR 60 Part Subpart UU

The emissions from the granule application system shall not emit particulate matter of an opacity of more than one 6-minute average greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate matter emissions greater than 40%.

ADEM. Admin. Code R. 335-3-4-.01(1)

Expected Emissions:

Emission Point	Pollutant	Expected Emissions (lb/hr)
2-1	PM ²	0.392
2-1	VOC ¹	13.17
2-1	Formaldehyde ¹	0.55
2-1	Total HAPs ¹	0.90
2-2	PM ²	4.62

¹ARMA-Asphalt Roofing Manufacturer's Association

² Based on baghouse 99% removal efficiency

Periodic Monitoring:

- **Opacity and Particulate Matter:**

The facility shall perform a visual check, once per week, of the stack associated with the Granule Application System and Filler Heater with Baghouse (EP 2-2). If instantaneous visible emissions in excess of 15% opacity are noted from the Granule Application System and Filler Heater with Baghouse (EP 2-2), maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The Permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

The inlet temperature of the HVAF (EP 2-1) shall be continuously monitored and recorded. The monitoring device shall have an accuracy of plus or minus 15 degrees Celsius over its range.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust of the baghouse (EP 2-2) to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever a pressure differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust of the HVAF (EP 2-1) to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever the pressure

differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Line 2 Filler Handling System

Limestone filler is transferred pneumatically from two existing roller mills, from the existing silos for the filler production unit, or from trucks into a 1440 ton filler silo with baghouse (EP 3-1). From the 1440 ton filler silo, filler is transferred pneumatically to a 30 ton filler receiving bin with baghouse (EP 3-2). Prior to being mixed with coating asphalt, the filler is heated in a filler heater with the emissions routed to the baghouse common to the Granule Application System (EP 2-2). The heating is supplied from the heat transfer fluid (HTF) system.

The Line 2 Filler Handling System is subject to 40 CFR 60 Subpart UU, "*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*".

The following units are part of the Line 2 Filler Handling System:

- 1440 ton filler silo with baghouse (EP 3-1)
- 30 ton filler receiving bin with baghouse (EP 3-2)

Emission Standards:

- **Particulate Standards:**

Particulate matter emissions from the 1440 ton filler silo (EP 3-1) shall not exceed 0.54 lb/hr.

Particulate matter emissions from the 30 ton filler receiving bin (EP 3-2) shall not exceed 0.37 lb/hr.

ADEM Admin. Code R. 335-3-14-.04 (Anti-PSD)

- **Opacity Standards:**

The emissions from these units shall not exceed an opacity greater than 1%.

40 CFR Part 60 Subpart UU

Expected Emissions:

EP	Pollutant	Expected Emissions (lb/hr)
3-1	PM	0.27 lb/hr
3-2	PM	0.18 lb/hr

Based on baghouse 99% removal efficiency

Periodic Monitoring:

- **Particulate Matter and Opacity:**

The facility shall perform a visual check, once per week, of the stacks associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to eliminate the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust of the baghouses to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever a pressure differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Line 2 Granule Handling and Storage

Granules are delivered to the site by truck and railcar. The truck or railcar empties granules into an underground hopper and onto a belt conveyor. The drop points from the hopper to the conveyor are hooded and vented to a baghouse. The granules are then transferred into a bucket elevator and lifted to a shuttle conveyor located above the granule storage silos. The bucket elevator and the drop points onto the shuttle conveyors are all vented to a baghouse. The shuttle conveyor transports the granules to the correct storage silo. The granules are then dropped into an enclosed chute that travels along the shuttle conveyor and can align with the top of each storage silo. The drop point from the conveyor into the chute is enclosed and vented to baghouse. The granules are then dropped from the storage silos onto another conveyor where they are then transferred to the shingle manufacturing line. The drop points from the silos for the fine, back surfacing granules are vented to a baghouse.

The emissions from line 2 granule storage transfer points and 24 silos are controlled by a single baghouse (EP 4-1). The line 2 butt granule unloading and transfer point emissions are controlled by a single baghouse (EP 4-2). The line 2 headlap/back surfacing unloading and transfer point emissions are controlled by a single baghouse (EP 4-3).

The Line 2 Granule Handling and Storage system is subject to 40 CFR 60 Subpart UU, *“Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture”*.

The following units are part of the Line 2 Filler Handling System:

- (22) 330 ton silos
- (2) 285 ton silos
- (2) underground unloading pits
- (2) 150 TPH unloading conveyors
- (2) 150 TPH unloading bucket elevators
- (2) 150 TPH shuttle conveyors
- (2) 100 TPH blending conveyors
- (2) 100 TPH bucket elevators to line conveyors
- (2) 100 TPH conveyors to roofing line 2

- **Opacity Standards:**

The emissions from the granule application system shall not exceed an opacity greater than 1%.

40 CFR Part 60 Subpart UU

- **Particulate Standards:**

Particulate matter emissions from the Baghouse (EP 4-1) shall not exceed 1.30 lb/hr.

Particulate matter emissions from the Baghouse (EP 4-2) shall not exceed 0.82 lb/hr.

Particulate matter emissions from the Baghouse (EP 4-3) shall not exceed 0.82 lb/hr.

ADEM Admin. Code R. 335-3-14-.04 (Anti-PSD)

Expected Emissions:

EP	Pollutant	Expected Emissions (lb/hr)
4-1	PM	0.65
4-2	PM	0.41
4-3	PM	0.41

Based on baghouse 99% removal efficiency

Periodic Monitoring:

- **Particulate Matter and Opacity:**

The facility shall perform a visual check, once per week, of the stacks associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to eliminate the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

A properly maintained and operated device shall be utilized to measure the pressure differential between the inlet and exhaust of the baghouses to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differential shall be checked on at least a weekly basis. Whenever a pressure differential is outside the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Heat Transfer Fluid Heating System

The Heat Transfer Fluid (HTF) system consist of three heaters, main supply pump, expansion tank tempered loop system, and safety relief system. The HTF system is used to provide a heated jacket of fluid on the storage tanks and various process equipment and process piping. The HTF heater consists of three natural gas fired spiral tube heaters with a rated input capacity of 6 MMBtu/hr each. The heaters shall burn natural gas only.

Emissions Standards:

- **Opacity:**

These units shall not discharge into the atmosphere particulates with an opacity greater than that designated as twenty percent (20%) opacity, as determined by a six (6) minute average. During one six (6) minute period in any sixty (60) minute period, these units may discharge into the atmosphere particulate emissions of an opacity no greater than that designated as forty percent (40%) opacity.

ADEM Admin. Code R. 334-3-4-.01(1).

- **Particulate Matter:**

Particulate matter emissions from each heater shall not exceed the allowable set by Rule 335-3-4-.03(1).

This section limits particulate matter emissions from fuel burning equipment. This is calculated using the fuel burning equipment equation, $E=1.38H^{-0.44}$, for Class I counties since the source is located in Tuscaloosa County.

$$E=1.38(H)^{-0.44}$$

Where E= Emissions in pounds per million BTU

H= Heat input in millions of BTU/hr

Emission Point	H	E	
	MMBtu/hr	lb/MMBtu	lb/hr
HTF	18	0.39	6.96

ADEM Admin. Code R. 335-3-4-.03(1)

- **Sulfur Dioxide:**

Sulfur Dioxide emissions from each heater shall not exceed the allowable set by Rule 335-3-5-.01

This section limits sulfur dioxide emissions from fuel burning equipment to 4.0 pounds per million BTU of heat input, for Category II counties. Tuscaloosa County is a category II county.

The sulfur dioxide emissions from the combustion of natural gas in the 6.0 MMBtu/hr heaters are minimal.

Expected Emissions:

Pollutant	(2) 6 MMBtu/hr Heaters	
	(lb/hr)	(TPY)
PM	0.14	0.60
SO ₂	0.01	0.05
NO _x	1.80	7.88
CO	1.51	6.62
VOC	0.10	0.43
HAPs	0.03	0.15

Based on AP-42 emission factors

Periodic Monitoring:

Since the system burns natural gas only, no additional monitoring is required.

These units are not subject to CAM because the pre-controlled emissions do not exceed major source thresholds.

Storage Tanks

Elk Corporation operates fourteen fixed roof asphalt storage tanks. Two 100,000 gallon oxidized asphalt tanks and two 15,000 gallon tanks are permitted under Shingle Manufacturing Line 2. The facility contains three 22,600 gallon coating asphalt tanks that were built in 1948, a 13,600 gallon asphalt flux tank that was built in 1972, and a 7,700 gallon laminate storage tank that was built in 1960; therefore, these tanks are not subject to 40 CFR 60 Subpart UU. Also, these tanks are considered insignificant because they are not subject to a rule and because the criteria pollutant emissions are lower than 5 tons per year, and the HAP emissions are lower than 0.5 tons per year.

40 CFR 60.470(b) states that any asphalt storage tank or blowing still that processes and/or stores asphalt used for roofing only or for roofing and other purposes, and that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart.

The facility operates five additional tanks which are either subject to NSPS Subpart UU and/or a significant source of VOCs. The facility operates a 22,600 gallon coating asphalt tank #4 that was built in 1948; therefore, not subject to NSPS Subpart UU. The emissions from this tank are uncontrolled. The facility operates a 25,000 gallon asphalt flux still #8 that was built in 2004 and a 13,600 gallon sealant still #6 that was built in 1986; therefore, subject to NSPS Subpart UU. The emissions from these two units are vented to heater air intake. The facility operates a 1,200 gallon laminant blending tank constructed in 1987 and a 1,200 gallon filled asphalt storage/surge tank constructed in 1983; therefore, these tanks are subject to NSPS Subpart UU. The two tanks are vented to a mist eliminator (EP 9-1).

- **Opacity Standards:**

Still #6, Still #8, the Blend Tank, and the Storage/Surge Tank are subject to 40 CFR 60 Subpart UU, “*Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*”. According to 40 CFR 60.472(c), the exhaust gases from any asphalt storage tank shall not have an opacity greater than zero (0%) percent, except for one consecutive fifteen (15) minute period in any twenty-four (24) hour period when the transfer lines are being blown for clearing. The control device shall not be bypassed during this fifteen (15) minute period.

40 CFR 60 Subpart UU

Tank #4 shall not emit particulate matter of an opacity of more than one 6-minute average greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate matter emissions greater than 40%.

ADEM. Admin. Code R. 335-3-4-.01(1)

Expected Emissions:

Tank	Pollutant	Expected Emissions (TPY)
4	VOC	9.05
6	VOC	0.16
8	VOC	0.71
Blending (EP 9-1)	VOC	1.00
Surge (EP 9-1)	VOC	9.05

Based on EPA Tanks 4.0 Program

Periodic Monitoring:

- **Opacity:**

The facility shall perform a visual check, once per week, of the stacks associated with these units.

If instantaneous visible emissions in excess of 15% opacity are noted from the 22,600 gallon Coating Asphalt Tank #4, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

If any instantaneous visible emissions are noted from the Still #8, Still #6, or the Mist Eliminator (EP 9-1) maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two (2) hours.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Stack observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.

The permittee shall submit a written report of exceedence of the stack opacity to the Department semi-annually.

Wendy J. Hall
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